

MAINTENANCE

Your Pinger Receiver was designed to be maintenance free. It is constructed of corrosive resistant materials. However, as with most diving equipment, it is recommended that it be rinsed in fresh water after use and stored in a cool, dry place.

Protect the Receiver Window. Do not sit the pinger receiver down on the black Receiver Window located in the front of the receiver. The window should be kept clean (soap and water) and protected from damage.

If the unit is disassembled, the o-rings can be lubricated with a silicon based lubricant. The charger and earphone connectors do not need to be "capped". Salt water will not effect these exposed connectors.

LIMITED WARRANTY

Your Pinger Receiver underwent constant inspection during assembly to insure many years of trouble free performance. The PR-1 is warranted for TWO FULL YEARS from the date of purchase. During this period your receiver will be repaired free of charge should a failure occur due to materials or workmanship under normal use.

The warranty does not cover damage due to dropping or general misuse. The warranty covers JW Fishers equipment only. JW Fishers will not be liable outside of the remedies stated above.

Should service be required, write or phone us explaining the nature of the problem, and we will provide shipping instructions. All repairs are made at our factory. Repairs by unauthorized persons may void the warranty.

RETURNING RECEIVER FOR REPAIR

If your receiver should need service, you can call, fax, write, or e-mail: info@jwfishers.com, phone (508) 822-7330, or fax (508) 880-8949 the factory for instructions. We do not require authorization for the return of equipment. If you have a problem with your receiver and would like to have it checked out at the factory, simply pack the receiver well and return it with a brief note describing the problem.

Be sure to include your return address and telephone number on the note. When returning equipment from outside of the US, to avoid Custom problems when arriving in the USA, contact the factory for specific instructions regarding shipping.

PR-1 PINGER RECEIVER

(Including optional Boat Deployment Kit)

OPERATION MANUAL

310



Optional Connector
for
Boat Deployment Kit

SPECIFICATIONS

- Frequency 3kHz to 97kHz.
- Bandwidth 2kHz.
- Directivity (typically) 30deg.
- Battery pack has nine sub-C 1.2 volt nicad batteries.
..... 30 hours of operating time per charge.

- Material high impact PVC.
- Color yellow.
- Depth rating 600 feet.

- Weight 7 lbs in air, slightly negative in water (4 oz).
- Size 4 1/2" dia, 12" long.

OPTIONS

- Carrying case.
- 220 vac charger.

CAUTIONS:

Do not allow the Pinger Receiver to be exposed to excessive heat by leaving it in direct sunlight or inside of a closed vehicle on a hot day. Excessive heat can damage the electronics and/or destroy the receiver's waterproof seals.

Do not sit the pinger receiver down on the black Receiver Window located in the front of the receiver. The window should be kept clean (soap and water) and protected from damage.

Always test pingers and pinger receivers on land or in shallow water before deploying in open water. Pingers do not broadcast signals very far through the air; however, they can be detected 5 to 10 feet away by a pinger receiver.

Before swimming in the direction of a received signal, always double-check other directions to insure that this direction is producing the strongest signal, and that it's not a reflected signal (see pages 5 and 6 of this manual.)

BATTERY CHARGING

After every 10 to 15 hours of use, charge the battery overnight. The charge LED, located directly above the Charger Jack, will illuminate while the charging is taking place.

Avoid charging the battery for more than 24 hours; overcharging can shorten the battery life. Charged batteries will power the receiver for 25-30 hours.

The batteries should be completely discharged at least once a year before fully recharging; this eliminates "battery memory".

CHARGER OPERATING PROCEDURES

- Turn receiver OFF.
- Wipe off charger connection on faceplate of receiver housing.
- Attach charger connector to connector on faceplate of receiver housing. Do not over tighten, just snug will do.
- Plug charger into wall outlet (120 vac only).
- Charge LED, located directly above Charger Jack, will be illuminated while charging is taking place (if it is not illuminated check charger connections.)
- When fully charged, the battery will provide 25-30 hours of continuous use. The battery requires 12-14 hours to fully recharge.
- DO NOT USE ANY CHARGER OTHER THAN THE ONE PROVIDED.

BOAT DEPLOYMENT KIT OPTION (continued)

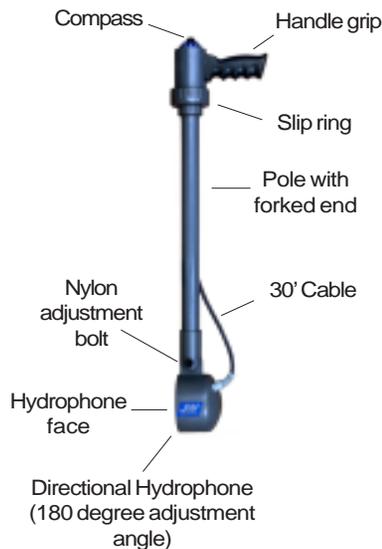
To assemble the hydrophone kit:

- 1) Assemble the four (or less) poles together. Hand tighten the poles until they are snug, do not over tighten.
- 2) Using the nylon bolt and wingnut, connect the hydrophone to the fork end of the pole. Note that there is a oring on the hydrophone connection point that helps keep the hydrophone from slipping. The oring makes it a tight fit. The wingnut should be snug enough so that the angle of the hydrophone stays in place. The angle of the hydrophone is fully adjustable. Adjust the angle slightly downward if you are a distance from the target pinger; the closer you are to the target pinger the more downward the face of the hydrophone should be pointed,
- 3) Screw the compass and handle assembly to the top pole.
- 4) Loosen the slip ring and rotate the pole assemble so that the black receiving face of the hydrophone is pointing away from the handle and operator.

CONNECTING THE HYDROPHONE TO THE PINGER RECEIVER

- 1) Remove the dummy plug from the Pinger Receiver handle and plug the cable from the hydrophone into the connector. Note: the dummy plug contains wiring that must be in place for the pinger receiver to operate without the optional hydrophone.

The pinger receiver with the boat deployed hydrophone is ready to go.



LOCATING PINGER FROM BOAT WITH OPTIONAL BOAT DEPLOYMENT KIT

INTRODUCTION

Pinger receivers are used to locate pingers. Pingers are devices that generate acoustic signals that travel hundreds of meters through the water. These signals are at a very precise frequency, usually between 20kHz and 70kHz. Pingers emit signals that are not continuous; but rather short bursts of energy, usually occurring about once per second.

The PR-1 is an highly advanced pinger receiver that will quickly locate any pinger operating from 3-97kHz. It can be operated as a diver-held receiver or can be deployed from a boat.



DIVER PREPARING TO DIVE TO LOCATE PINGER IN WATER



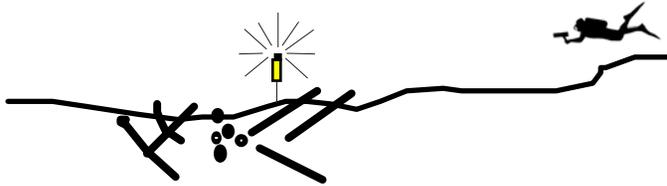
LOCATING PINGER FROM BOAT

The system is easy to operate. The receiver is tuned to the desired pinger frequency and the diver scans the area. When the diver points in the direction of the pinger, the pinger can be clearly heard in the earphone. The Signal Strength Meter also indicates that the pinger has been detected and shows the relative strength of the received signal. The sensitivity of the receiver is then reduced and the diver obtains a precise heading to the pinger. By looking at the compass, mounted on top of the receiver, the diver can determine the exact heading to the pinger.



LOCATING PINGER FROM BOAT WITH OPTIONAL BOAT DEPLOYMENT KIT

As the diver swims closer to the pinger, the audio tone gets louder and the Signal Strength Meter indicates the received signal is getting stronger.



If more than one pinger is operating in the area, the diver can switch the receiver tuning (illuminated digital readout) to the new frequency and repeat the above procedure.



The receiver is powered by a nicad battery pack that will operate for 30 continuous hours before needing recharging. A battery charger that operates from 120 vac is provided. A transformer that allows the charger to operate from 220 vac is available as an option.

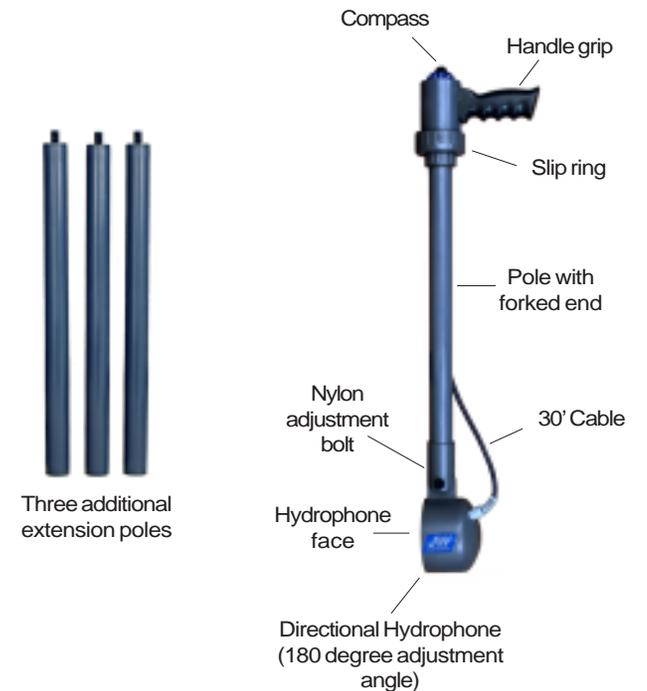
Fishers pinger receiver is built for rugged operation and is covered by a full TWO YEAR WARRANTY.

BOAT DEPLOYMENT KIT OPTION

The pinger receiver is available with an optional underwater connector on the handle that allows the pinger receiver to be connected to a remote directional hydrophone that can be deployed over the side of a boat. When connected, this hydrophone replaces the hydrophone that is in the front of the pinger receiver.

The hydrophone kit consists of a hydrophone on a 30 foot cable, four poles that are assembled together for a total length of 6 feet, and a handle grip assembly with a built-in compass. The hydrophone kit comes in its own carrying case which also has room for the pinger receiver.

Boat Deployment Kit Option



5. Once a “beep” is heard in the earphone, turn the Receiver Sensitivity down so that the signal can be clearly heard without any background noise. Reducing the sensitivity also reduces the receive angle (narrows the angle) so that the pinger can be pinpointed.
6. Make another slow 360 degree sweep. This time you are looking for additional “beeps”. The direction that produces the loudest “beep” will be the direction of the pinger. The other weaker signals are from reflections of the original signal.

Note: Pingers send their signal out in all directions. When the signal hits an object (rock, boat bottom, wreck, water surface, ocean bottom, fish, etc) it reflects off the object and heads in a different direction (at a much reduced signal strength.)

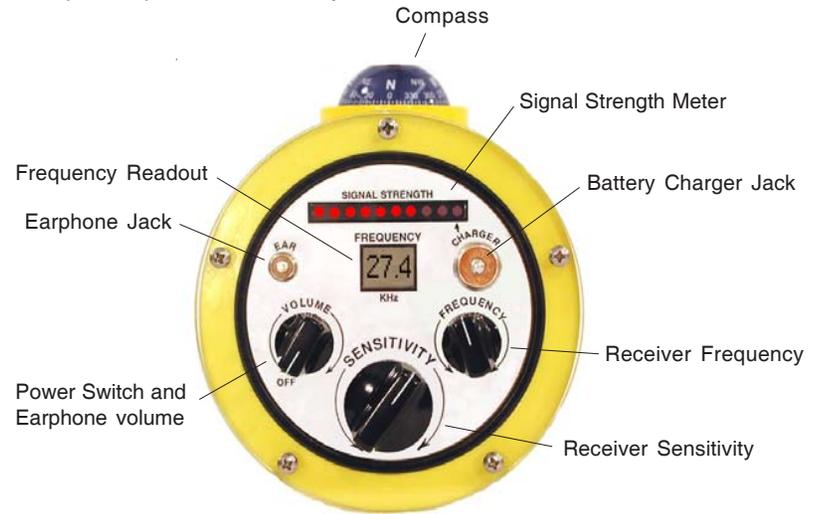
7. Swim toward the strongest signal while slowly pointing the receiver to the left and to the right of the pinger center (strongest signal.) As the signal gets stronger, continue to turn down the Receive Sensitivity knob so that it is easy to pinpoint the direction to the pinger.

Comments:

- The “Signal Strength Meter” can also be used to pinpoint the signal source.
- When the direction of the pinger is established, the compass will give you a “heading reading” to the pinger.
- When the Receiver Sensitivity knob is turned down to give you a narrow receive angle (for pinpointing signal source); the narrow receive angle is in both the vertical and horizontal direction.

READOUTS, CONTROLS & CONNECTORS

The Pinger Receiver has readouts and controls on its faceplate for complete operation of the system.



PR-1 FACEPLATE VIEW

Power Switch, Volume Turns the receiver On/Off and adjusts the volume of the “beep” in the earphone. This knob is generally turned to maximum at the beginning of the search for the pinger to allow the operator to hear the weakest (most distant) signals.

Receiver Frequency A ten-turn control that tunes the receiver to match frequency of the pinger that is to be located. The PR-1 can be tuned to receive signals from 3kHz to 97kHz in increments of 100Hz. One full turn of the knob changes the readout 10kHz.

Frequency Readout A three digit illuminated LCD readout that displays the frequency (in kHz) that the receiver is tuned for. The LCD readout updates as the Receiver Frequency control is changed.

Receiver Sensitivity Adjusts the “gain” of the receiver. This knob is generally turned to maximum at the beginning of the search for the pinger. As the pinger gets closer, the sensitivity is reduced to make pinpointing of the pinger easier.

Signal Strength Meter Ten LEDs show the strength of the received signal. As the receiver gets closer to the pinger, the more LEDs will be illuminated.

Compass Once the precise direction of the pinger is determined, the operator can check the compass to determine the heading that will lead him directly to the pinger.

Earphone Jack The underwater earphone connects to this jack. When the receiver detects a signal from a pinger, a “beep” can be heard in the earphone. As the receiver gets closer to the pinger, the “beep” will get louder. The earphone can be connected in or out of the water.

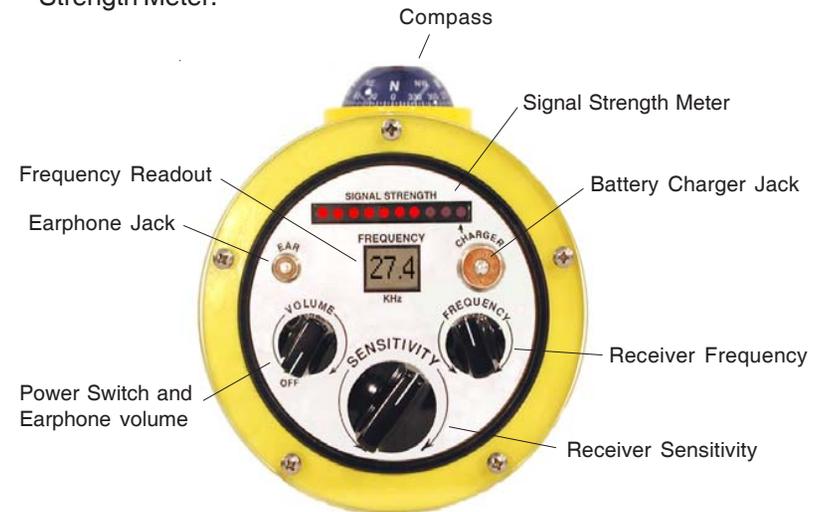
Battery Charger Jack The 120vac battery charger connects to this jack. When charging is taking place, the LED above the Charger Jack will be illuminated.



Receiver Window The pinger signal is detected through the Receiver Window located in the front of the Pinger Receiver. The window should be kept clean and protected from damage.

OPERATION

Receiver operation is very simple and straight forward. With a basic understanding of pingers and pinger receivers, and with some practice, anyone can become proficient at locating pingers. Keep in mind that pingers produce a short burst of energy, every second or so, and the receiver converts the energy pulse into a “beep” that is heard in the earphone and displayed in the Signal Strength Meter.



PR-1 FACEPLATE VIEW

1. Turn the receiver on and adjust the volume to maximum.
2. Turn the Frequency knob (a ten-turn control) until the LCD readout displays the frequency of the pinger you are trying to locate. Note that the bandwidth of the receiver is approximately 2kHz.; so it will detect pingers plus or minus 1kHz from the displayed LCD readout. However, the receiver will detect a pinger at the furthest distance when the receiver LCD readout frequency is set to the same frequency as the pinger.
3. Turn the Receiver Sensitivity clockwise (adjusts the gain of the receiver) until a “hiss” can be heard in the earphone.
4. Point the Receiver Window directly away from you, and slowly turn 360 degrees. The pinger is generating a short pulse only once per second (it could be once per two seconds) so turn very slowly so you do not miss the “beep”.